

PROTOCOL  
BETWEEN THE DEPARTMENT OF STATE  
OF THE UNITED STATES OF AMERICA  
AND THE SECRETARÍA DE COMUNICACIONES Y TRANSPORTES  
OF THE UNITED MEXICAN STATES  
CONCERNING THE ALLOTMENT AND USE  
OF THE 406.1-420 MHz BAND  
FOR FIXED AND MOBILE SERVICES  
ALONG THE COMMON BORDER

This Protocol is being concluded pursuant to the Agreement Between the Government of the United States of America and the Government of the United Mexican States Concerning the Allocation and Use of Frequency Bands by Terrestrial Non-Broadcasting Radiocommunication Services Along the Common Border signed in Williamsburg, Virginia June 16, 1994, (herein referred to as the "Agreement").

## ARTICLE I. Purposes

The purposes of this Protocol are:

1. To establish and adopt a plan for the equitable allotment and use of frequency sub-bands in the 406.1-420 MHz band within the Sharing Zone defined in this Protocol;
2. To establish technical criteria to regulate the use of the frequency sub-bands referred to in paragraph 1 of this Article;
3. To establish conditions of use so that each Administration may use the frequency sub-bands allotted to the other country for fixed and mobile services, provided this causes no harmful interference; and
4. To provide special interference protection for certain critical receiver stations specifically identified in Appendix I.

## ARTICLE II. Definitions

1. For the purpose of this Protocol and as provided for in Article IV of the Agreement, the term Administration or Administrations will refer with equal effect to the National Telecommunications and Information Administration of the Department of Commerce of the United States of America (hereinafter United States) and to the Secretaría de Comunicaciones y Transportes of the United Mexican States (hereinafter Mexico).

2. The Sharing Zone is defined to include the border areas within the United States and Mexico and their respective territorial waters as set forth in Appendix II.

3. Special interference protection is defined as that protection from harmful interference afforded only to those critical receiver stations specifically identified in Appendix I.

#### ARTICLE III. Conditions of Use

1. In the Sharing Zone, the radio frequency sub-bands in the 406.1-420 MHz band shall be allotted for the primary use of each Administration in accordance with Appendix III. Each Administration shall ensure that all stations subject to its jurisdiction in the 406.1-420 MHz band are operated in such a way that the transmission bandwidth on radio channels shall not exceed the primary frequency allotments in Appendix III.

2. Each Administration shall ensure that fixed and mobile stations assigned to primary frequency allotments within the Sharing Zone shall be operated in accordance with the effective radiated power (ERP) and antenna height limitations specified in the following table (Table I):

**Table I**

Average of the Antenna Height Above Average Terrain on Standard Radials in the Direction of the Common Border <sup>1</sup>	Maximum ERP in Any Direction Toward the Common Border	
	Watts	dBm
Meters		
Up to 150	500	+56.98
Above 150 to 225	350	+55.44
Above 225 to 300	250	+53.98
Above 300 to 450	200	+53.01
Above 450 to 600	150	+51.76
Above 600 to 750	100	+50.00
Above 750 to 900	75	+48.75
Above 900 to 1,050	50	+46.98
Above 1,050	30	+44.77

Existing stations in primary frequency allotments shall conform with the above power limitations on or before January 1, 2008.

3. Each Administration shall ensure that the operation of stations on aircraft is limited to portable stations situated inside the aircraft, which have a maximum power of 5.0 watts and which do not employ antennas externally mounted on the aircraft. Such stations may only operate in the primary frequency allotments for their Administrations and at an altitude of up to 20,000 feet (6096 meters) above mean sea level. Each Administration shall take measures to eliminate any harmful interference caused by its portable stations situated inside aircraft.

<sup>1</sup> Standard radials are 000°, 045°, 090°, 135°, 180°, 225°, 270° and 315° relative to True North.

4. Frequencies in sub-bands that are allotted for the primary use of one Administration may be assigned by the other Administration to stations located within the latter Administration's territorial segment of the Sharing Zone in accordance with the following conditions:

a. The maximum power flux density (PFD) at any point at or beyond the common border shall not exceed  $-143 \text{ dBW/m}^2$ .

b. Land mobile stations and ship stations shall not be operated within 30 kilometers of the common border, and in addition to this distance separation, the power flux density of transmissions from land mobile stations and ship stations shall, in no case, exceed  $-143 \text{ dBW/m}^2$  at any point at or beyond the common border.

c. Land portable stations shall not be operated within 10 kilometers of the common border, and in addition to this distance separation, the power flux density of transmissions from portable stations shall, in no case, exceed  $-143 \text{ dBW/m}^2$  at any point at or beyond the common border.

d. Each Administration shall take proper measures to eliminate any harmful interference caused by stations operating within its own territory pursuant to this Protocol.

e. Each Administration shall ensure protection to stations assigned to radio frequencies in primary allotments of the other Administration operating in accord with this Protocol.

f. Stations operating in accordance with the conditions set forth in this paragraph 4 shall be considered as secondary and shall not be granted protection against harmful interference from stations whose Administration has primary use of the frequency allotment.

5. Beyond the Sharing Zone, each Administration shall have unrestricted use of the 406.1-420 MHz band.

#### ARTICLE IV. Transition Arrangement for Existing Stations

1. Each Administration shall ensure that existing stations within the Sharing Zone that are operating in primary frequency sub-bands allotted to the other Administration shall either cease transmissions or assume secondary status on or before January 1, 2008, in accordance with paragraph 2 or 3 below except for the stations listed in Appendix I which are governed by Article V of this Protocol.

2. Existing stations in the following categories, which are operating in primary frequency allotments of the other Administration, shall cease transmissions on or before January 1, 2008:

a. Stations at fixed locations that do not meet the pfd limitation set forth in subparagraph 4.a of Article III of this Protocol;

b. Land mobile stations, ship stations and land portable stations that are located in the areas set forth in subparagraphs 4.b and 4.c of Article III of this Protocol; and

c. Portable stations operated in aircraft located in the Sharing Zone defined in paragraph 2 of Article II.

3. Existing stations that are able to assume secondary status as provided in paragraph 1 of this Article shall conform to the provisions of subparagraphs 4.d, 4.e and 4.f of Article III of this Protocol.

ARTICLE V. Special Interference Protection for Critical Receiver Stations

1. The critical receiver stations within the 406.1-420 MHz band specifically identified in Appendix I shall be afforded special interference protection from harmful interference notwithstanding the provisions of Article III and Article IV.

2. Any station within the Sharing Zone that causes harmful interference to a critical receiver station or stations specifically identified in Appendix I shall take all remedial measures necessary to eliminate the harmful interference to the protected station or stations and their referenced parameters.

ARTICLE VI. Relation to Other Agreements

This Protocol forms an integral part of the Agreement and shall be referred to as the Protocol for the 406.1 - 420 MHz band in the Index of Annex I of the Agreement.

ARTICLE VII. Appendices

Appendices I, II and III are an integral part of this Protocol.

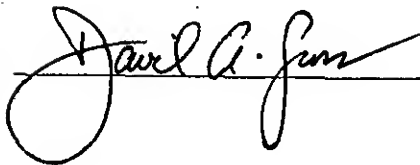
ARTICLE VIII. Entry into Force and Termination

This Protocol shall enter into force on the date of signature. It shall remain in force until it is replaced by a new Protocol, or until it is terminated in accordance with Article VII of the Agreement.

IN WITNESS WHEREOF, the respective representatives have signed the present Protocol.

Done at Mexico City this twenty-seventh day of July, 2005, in duplicate, in the English and Spanish languages, both texts being equally authentic.

FOR THE DEPARTMENT OF STATE  
OF THE UNITED STATES OF AMERICA

A handwritten signature in cursive script, appearing to read "David A. Johnson", written over a horizontal line.

FOR THE SECRETARÍA DE  
COMUNICACIONES Y  
TRANSPORTES OF THE  
UNITED MEXICAN STATES

A handwritten signature in cursive script, consisting of a large initial and a surname, written over a horizontal line.A handwritten signature in cursive script, consisting of a large initial and a surname, written over a horizontal line.



# APPENDIX I

## CRITICAL RECEIVER STATIONS IN MEXICO IN THE 406.1-420 MHz BAND THAT WILL BE AFFORDED SPECIAL INTERFERENCE PROTECTION

No.	Receiver Station Name	Receiver Frequency in MHz	Receiver Emission Designator	Receiver Geographic Coordinates (NAD 83)  Latitude (N) Longitude (W)	Receiver Antenna Azimuth Relative to True North  (N. 000°E.) (NAD 83)	Receiver Antenna Type, Beamwidth in Degrees & Polarization  "H" or "V"	Receiver Antenna Height Above Ground Level in Meters
1	Rep. Cedros	413.9250	3M75F8EJF	25° 32' 52" 100° 58' 51"	187° 42' 05"	Parabolic  14 V	40
2	S.B. Ramos Arizpe Potencia	410.1750	3M75F8EJF	25° 35' 46" 100° 54' 45"	232° 03' 54"	Parabolic  14 V	45
3	Rio Escondido	413.9250	3M75F8EJF	28° 29' 30" 100° 41' 08"	230° 52' 48"	Yagi  45 H	40.9

No.	Theoretical PFD Level of Desired Signal at Receiver in dBm	Associated Transmitter Station Name	Associated Transmitter Location  Latitude (N) Longitude (W)	Nominal Power  (dBW)	Antenna Gain  (dBd)	Effective Radiated Power  ERP (dBW)	Equivalent Isotropically Radiated Power  EIRP (dBW)
1 (Cont'd)	-12.8	S.E. Saltillo	25° 24' 35" 101° 00' 05"	10	23	30 *	32.16 *
2 (Cont'd)	-12.8	Rep. Cedros	25° 32' 52" 100° 58' 51"	10	23	30 *	32.16 *
3 (Cont'd)	-36.3	Nava	28° 26' 00" 100° 46' 00"	10	12	19 *	21.16 *

\* Calculation includes 3 dB loss for transmission line

# APPENDIX I (Continued)

## CRITICAL RECEIVER STATIONS IN THE UNITED STATES IN THE 406.1-420 MHz BAND THAT WILL BE AFFORDED SPECIAL INTERFERENCE PROTECTION

No.	Receiver Station Name	Receiver Frequency in MHz	Receiver Emission Designator	Receiver Geographic Coordinates (NAD 27)  Latitude (N) Longitude (W)	Receiver Antenna Azimuth Relative to True North  (N.000°E.) (NAD27)	Receiver Antenna Type, Beamwidth in Degrees & Polarization  "H" or "V"	Receiver Antenna Height Above Ground Level in Meters
1	Laguna Dredge	406.1875	11K00F2D--	32° 51' 19" 114° 28' 55"	58°	Yagi 60 V	18
2	Telegraph Pass	406.5000	11K00F3B--	32° 40' 12" 114° 20' 06"	228°	Yagi 45 H	6
3	Gila Substation	407.7875	11K00F2D--	32° 41' 05" 114° 28' 09"	304°	Yagi 60 V	24
4	Hidden Shores Substation	415.1875	11K00F2D--	32° 52' 05" 114° 27' 28"	238°	Yagi 60 V	6
5	San Luis	416.4000	11K00F3B--	32° 29' 42" 114° 45' 57"	64°	Yagi 45 H	6
6	Siphon Drop	416.7875	11K00F2D--	32° 46' 45" 114° 38' 05"	124°	Yagi 60 V	8

No.	Theoretical PFD Level of Desired Signal at Receiver in dBm	Associated Transmitter Station Name	Associated Transmitter Location  Latitude (N) Longitude (W)	Nominal Power  (dBW)	Antenna Gain  (dBd)	Effective Radiated Power ERP (dBW)	Equivalent Isotropically Radiated Power EIRP (dBW)
1 (Cont'd)	-44.6	Hidden Shores Substation	32° 52' 05" 114° 27' 28"	7	6	13	15.15
2 (Cont'd)	-57	Sonora Substation	32° 28' 48" 114° 35' 14"	7	10	17	19.15
3 (Cont'd)	-60	Siphon Drop	32° 46' 45" 114° 38' 05"	7	6	13	15.15
4 (Cont'd)	-45	Laguna Dredge	32° 51' 19" 114° 28' 55"	7	6	13	15.15
5 (Cont'd)	-58	Telegraph Pass	32° 40' 12" 114° 20' 06"	7	10	17	19.15
6 (Cont'd)	-61	Gila Substation	32° 41' 05" 114° 28' 09"	7	6	13	15.15

## APPENDIX II

### Areas Within Which the Frequencies Are to Be Protected

#### **U.S.-MEXICO SHARING ZONE**

The Sharing Zone is defined as the areas covered by a distance of 145 kilometers (90.1 miles) from the U.S.-Mexico common border into the national territory of each country and includes areas of the Pacific Ocean and the Gulf of Mexico.

These areas are enclosed by the boundaries shown on the map to the right and are further defined in Table II.

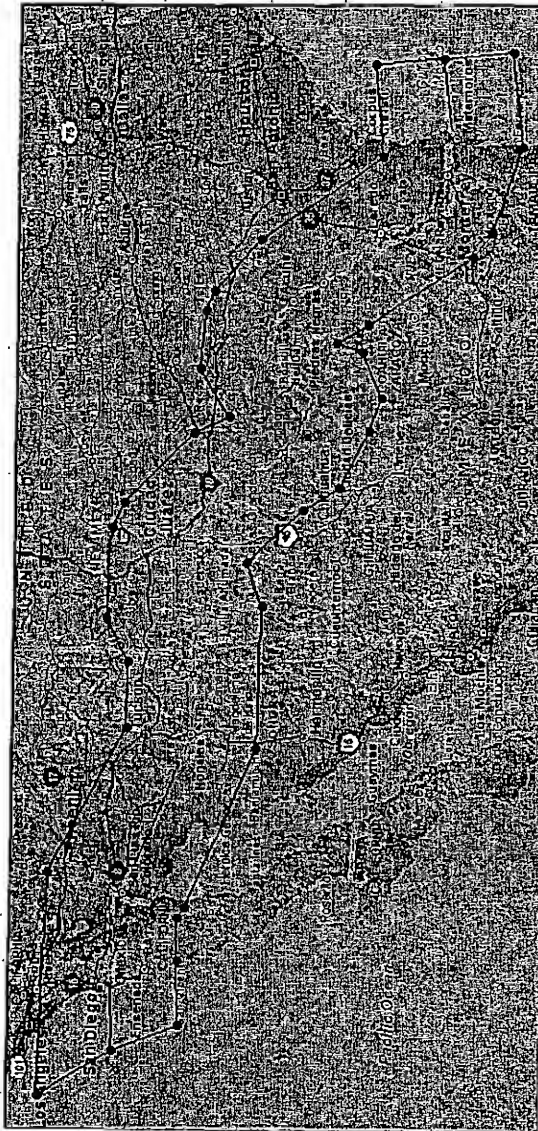


Table II

The following geographic coordinates define the U.S.-Mexico Sharing Zone in the national territory of each country. Point 1 is located in the Pacific Ocean due west from the U.S.-Mexico common border and is the starting point in defining the Sharing Zone. The boundary of the Sharing Zone is then defined by plotting each geographic point in advancing numerical order in a clockwise direction. Each distance path between consecutive points is traversed by great circle arc.

No.	Degrees/Minutes/Seconds	Decimal Degrees
1	32°14'16"N 118°37'09"W	32.3772N 118.6192W
2	33°44'18"N 119°58'13"W	33.7384N 119.9704W
3	34°00'16"N 114°28'01"W	34.0044N 114.4670W
4	32°37'24"N 110°51'01"W	32.6234N 110.8505W
5	32°38'60"N 109°18'02"W	32.6500N 109.3006W
6	33°05'47"N 108°15'42"W	33.0965N 108.2617W
7	33°01'27"N 106°06'30"W	33.0242N 106.1083W
8	32°46'33"N 105°30'38"W	32.7757N 105.5105W
9	31°21'30"N 103°55'51"W	31.3584N 103.9309W
10	30°39'31"N 103°34'01"W	30.6587N 103.5670W
11	31°11'40"N 102°26'12"W	31.1945N 102.4368W
12	31°02'47"N 101°04'18"W	31.0465N 101.0717W
13	30°51'19"N 100°36'43"W	30.8553N 100.6120W
14	29°54'03"N 099°28'55"W	29.9007N 099.4820W
15	27°21'20"N 097°48'03"W	27.3556N 097.8009W
16	27°21'05"N 095°42'14"W	27.3516N 095.7038W
17	25°58'50"N 095°42'22"W	25.9805N 095.7061W
18	24°33'14"N 095°42'46"W	24.5539N 095.7128W
19	24°32'41"N 097°48'44"W	24.5448N 097.8122W
20	25°15'14"N 099°40'56"W	25.2539N 099.6823W
21	25°40'42"N 100°10'59"W	25.6782N 100.1833W
22	27°52'01"N 101°35'16"W	27.8669N 101.5877W
23	28°29'18"N 101°57'45"W	28.4884N 101.9625W
24	27°58'15"N 102°11'48"W	27.9709N 102.1967W
25	27°38'22"N 103°16'32"W	27.6394N 103.2755W
26	27°54'33"N 103°59'11"W	27.9093N 103.9863W
27	28°30'31"N 105°15'57"W	28.5085N 105.2659W
28	29°13'30"N 105°45'37"W	29.2249N 105.7604W
29	30°19'17"N 106°57'15"W	30.3215N 106.9544W
30	30°01'37"N 107°56'47"W	30.0271N 107.9464W
31	30°01'18"N 111°15'28"W	30.0216N 111.2579W
32	31°14'10"N 115°05'28"W	31.2361N 115.0911W
33	31°21'26"N 115°20'31"W	31.3572N 115.3419W
34	31°14'34"N 116°21'25"W	31.2427N 116.3570W
35	31°08'09"N 117°53'38"W	31.1359N 117.8939W

### APPENDIX III

#### Allotment of Frequency Sub-bands in the 406.1-420 MHz Band

##### Mexico Primary<sup>2</sup>

##### U.S. Primary<sup>2</sup>

406.10000 - 408.51875

408.51875 - 410.93125

410.93125 - 413.05000

413.05000 - 415.16875

415.16875 - 417.58125

417.58125 - 420.00000

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<sup>2</sup> All frequencies in MHz